

The SELA Report

Southeastern Louisiana Flood Control Project Number 1

Winter 1998



US Army Corps
of Engineers
New Orleans District

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Federal Dollars Ready to Combat Floods in Orleans, St. Tammany and Jefferson Parishes

The professionals called it a 100-year rainfall event. The people of Orleans, Jefferson and St. Tammany parishes were more direct. They called it hell with high water.

On May 8, 1995, up to 20 inches of rain fell in the New Orleans metropolitan area, killing seven people, causing \$1 billion in damages and establishing an irrefutable case for the need to improve the three parishes' capacity to cope with rainfall flooding.

Major urban flooding has long been a familiar experience for Southeast Louisiana residents. Storms dumping millions of cubic feet of rain and

causing serious widespread flooding have occurred in nine of the last 15 years. But according to Joe Sullivan, Superintendent of the New Orleans Sewerage and Water Board "The loss of life and the magnitude of the destruction of the 1995 flood shocked everyone into a sense of urgency."

That urgency is apparent in the remarkable progress that has been made in the planning, funding and first

stage implementation of the Southeastern Louisiana Urban Flood Control Project (SELA). Some highlights:

- U.S. Army Corps of Engineers reconnaissance studies have been completed in all three parishes. These studies have established the cost-effectiveness of improvements in canals and pumping stations.
- SELA has been created, and \$300 million in federal funds has been

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The SELA Report is published twice a year by the U.S. Army Corps of Engineers to communicate news and issues of interest related to urban flood control in Southeastern Louisiana.

SELA is a joint effort of the U.S. Army Corps of Engineers, and Jefferson, Orleans and St. Tammany parishes to reduce rainfall flooding. The program uses federal and locally-matched funds.

Please address all questions, comments and suggestions to the address at right.

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authorized for expenditure in the three parishes. (The required local matching funds will bring the total expended to \$407 million.)

- Jefferson and Orleans parishes have met the federal requirement for local sponsorship and have committed to cost-sharing agreements for SELA project construction.

“The loss of life and the magnitude of destruction in the 1995 flood shocked everyone into a sense of urgency.”

- Corps feasibility studies that may expand the scope of SELA projects are now being completed.

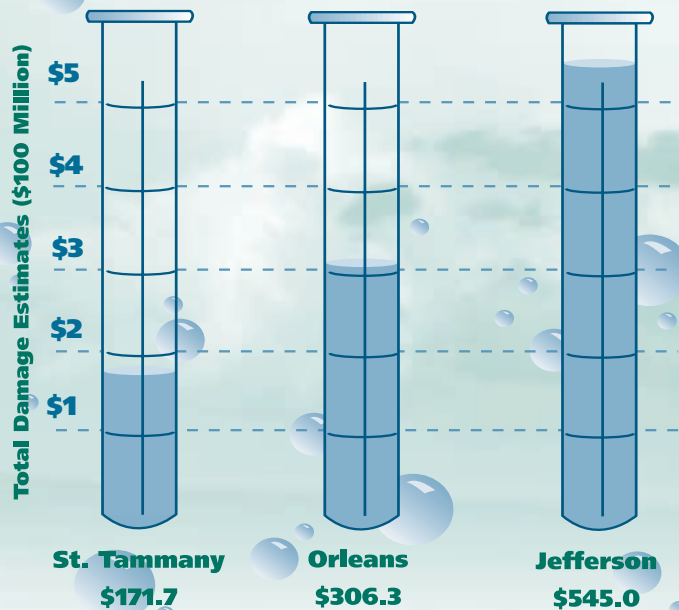
- Local sponsors are implementing funding mechanisms to meet the required 25 percent local match to federal dollars.
- Jefferson Parish has three major SELA projects under construction.
- Information is being published to inform residents about the benefits and construction timetables of SELA projects.

moving capacity of the two fundamental elements in the flood control system — canals and pumps. When implemented, SELA projects throughout the three parishes will put thousands more cubic feet of rainwater through the area’s pumps, down its canals and into Lake Ponchartrain. This will require deepening and widening some earthen canals, lining others with concrete, enlarging underground canals, building new canals and increasing the existing pumping capacity through upgrades and the installation of new stations.

The ambitious undertaking will mean 167,200 linear feet, or 31.67 miles, of canals will be constructed or improved, while the area’s pumping capacity will be improved by nearly 13 percent — a powerful set of numbers representing a project that will stem the flow of all but the worst kind of deluge. ♦

Gauging The Damage

May 1995 Flood



Canals and Pumps

SELA’s efforts focus on increasing the water-

Pumping the City Dry

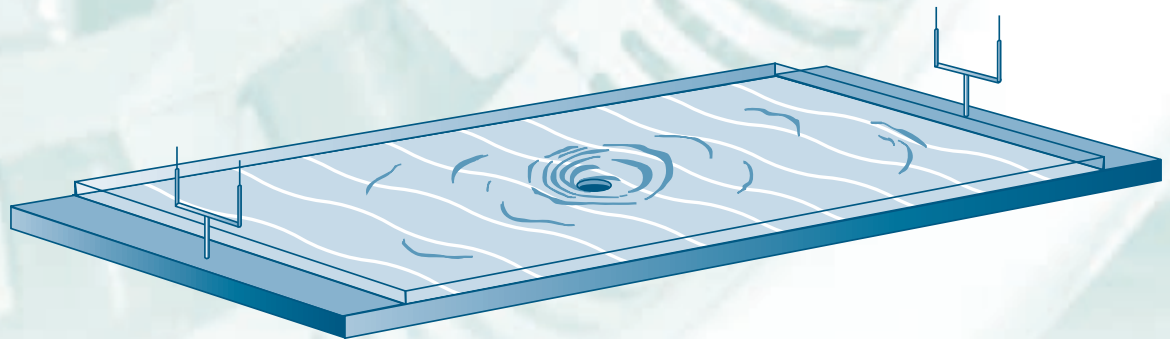
Abundant rainfall and unique topography combine to create the conditions that make flood control crucial to Jefferson, Orleans and St. Tammany parishes.

Average annual rainfall of 58 inches makes New Orleans the rainiest city in the U.S., and it is the only urban area in the country that is below sea level. The levees that ring the region hold back the Mississippi River and storm surges from Lake Pontchartrain, but without the canals and pumps that move rainwater from the low-lying neighborhoods to outlets emptying into the lake, the New Orleans area would still be the swamp that nature intended it to be.

SELA's improvements are focused on both elements of the drainage system — the canals and the pumps. Improvements to the canals mean they will carry more water, a capability that must be matched by that of the pumps that move the water along.

Pump capacity is measured in cubic feet per second (cfs) — the amount of water, measured in cubic feet, that a pump can move in one second. For example, the new Whitney/Barataria pump station to be built in Jefferson

Parish will have a capacity of 3,000 cfs. This means that if an area the size of a football field were filled with water four feet deep, the pump could drain the field in one minute.



In one minute, the new Whitney/Barataria pump will be able to drain 4 feet of water from an area the size of a football field.

Pump improvements authorized by SELA include the following:

In Orleans Parish

- New pumping station, Peoples Canal near Abundance St. — 400 cfs capacity
- Dwyer Pump Station — Addition of 875 cfs capacity
- Broad St. Pump Station (#1) — Addition of 1,050 cfs capacity and other improvements
- Oleander St. Pump Station — Addition of 250 cfs capacity and flap gate

In Jefferson Parish

- New pumping station, Whitney/Barataria — 2,000 cfs capacity
- Westminster Pump Station — Addition of 1,200 cfs capacity
- Pump Station #2, Suburban — Addition of 2,400 cfs capacity
- Pump Station #3, Elmwood — Addition of 2,400 cfs capacity
- New Westwego Pump Station — Addition of 325 cfs capacity

In St. Tammany Parish

While future flood control plans for St. Tammany Parish may include pumping stations, none are currently slated.

Historical Background

Of all the pumps in the world, some of the most famous are found in Orleans Parish. They are renowned for

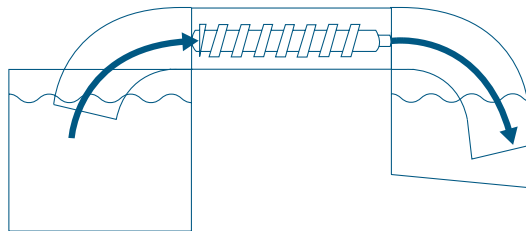
SELA's improvements are focused on both elements of the drainage system — the canals and the pumps.

two reasons: their efficiency and their longevity. The first of the 12-foot screw-type pumps that drain the city was installed in 1915, and 82 years later those same pumps are still serving the city well.

The man responsible for these pumps was a New Orleans native, Albert Baldwin Wood, born in 1878 and hired by the New Orleans Sewerage and Water Board in 1899 as assistant manager of drainage. As he sought

to improve the city's drainage system, the young engineer turned his creativity and ingenuity toward designing bigger and better pumps. By the age of 27, Wood had invented a 6-foot centrifugal pump, then the largest of its kind in the world. His next successful project was a flap-gate design that prevented water from backing into the pumps when they were not in use. Finally, in 1915, working unpaid during his evening hours, he produced the design for the 12-foot pumps that had the capacity to move more water than any pump then in existence.

Today there are 21 pumping stations in New Orleans with a combined pumping capacity of 47,000 cfs. Jefferson Parish also has 21 pumping stations; their combined capacity is 37,455 cfs. SELA projects will increase the two parishes' capacities by 2,575 and 9,325 cfs respectively, for a total pumping capacity in both parishes of 96,355 cfs — enough to drain about 32 of those football fields in one minute. ♦



The horizontal screw pumps at Pump Station #1 on Canal Street move water from a subsurface collection basin beneath the station to the discharge canal. The canal then carries the water to Lake Pontchartrain.

Moving the Water Out: SELA Project List Takes Shape

SELA's construction plans are nothing short of impressive.

Over the next five years, the Corps of Engineers, in cooperation with local partners, will oversee more than \$400 million of construction on over 40 different projects in Orleans, Jefferson and St. Tammany parishes. These efforts, set to improve rainfall flood control, will enhance or revise the two facets of the existing flood control system — canals and pump stations.

The maps that follow identify the type and location of authorized SELA projects in the tri-parish project area, while the corresponding charts provide specific information about each project.

Canal Improvements

The bulk of SELA's construction efforts focus on improving the existing network of canals in Jefferson and Orleans parishes, as well as on developing similar systems in St. Tammany Parish.

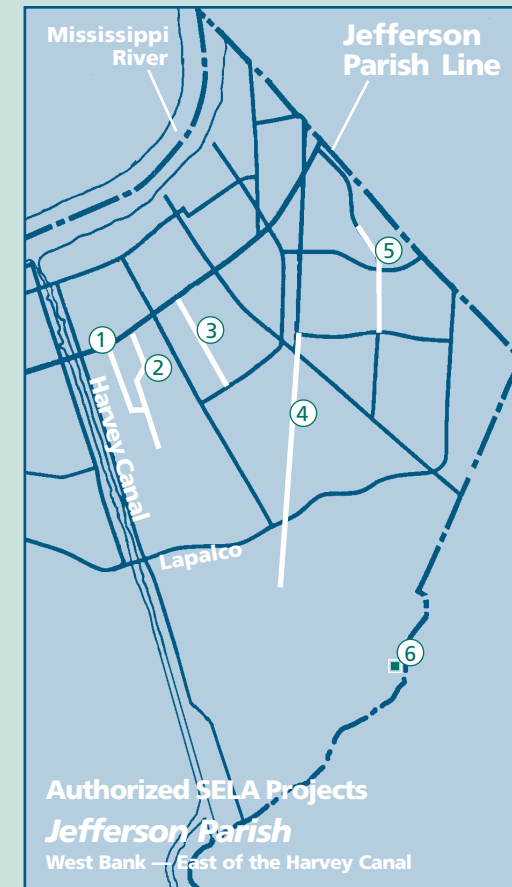
Canal improvements can range from a basic widening of an existing earthen canal to the complicated replacement

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Authorized SELA Projects — Jefferson Parish West Bank - East of the Harvey Canal

Canal Improvements

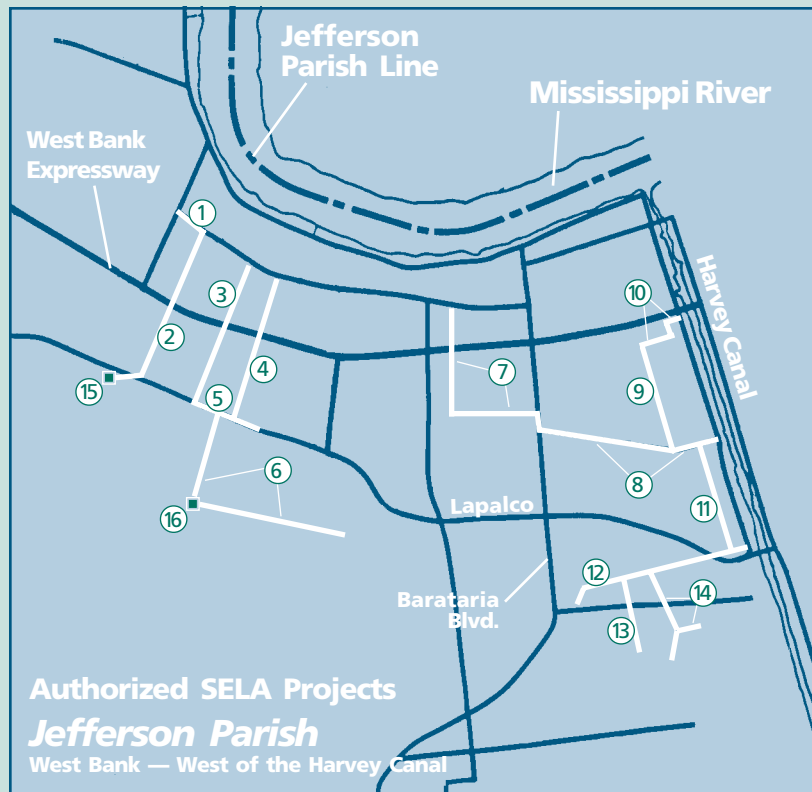
- 1 Brown Ave. Canal improvements from West Bank Expressway to Harold Street
Work: Construct 2,000 feet of 20' wide concrete flume
Cost: \$1.3 million
- 2 Gardere Canal improvements from West Bank Expressway to 2,600 feet past Brown Ave. Canal
Work: Construct 7,100 feet of concrete flume; 800 feet of earthen channel
Cost: \$4.0 million
- 3 Whitney Canal improvements from Governor Hall Canal to Bayou Fatma
Work: Construct 10,700 feet of improved earthen channel
Cost: \$925,000
- 4 Heebe Canal improvements from Westbank Expressway to Gretna Boulevard
Work: Construct 5,100 feet of improved earthen channel
Cost: \$925,000



- 5 Terry Parkway Canal improvements from Browning Avenue to Carol Sue
Work: Construct 5,446 feet of 7'x14', 7'x12', and 6'x12' concrete box culvert, 4,530 feet of concrete flume, and 2,950 feet of improved earthen channel
Cost: \$9.2 million

Pumping Station Improvements

- 6 Whitney/Barataria Pump Station
Work: Construct new 2,000 cfs pumping station
Cost: \$9.9 million



Authorized SELA Projects — Jefferson Parish West Bank - West of the Harvey Canal

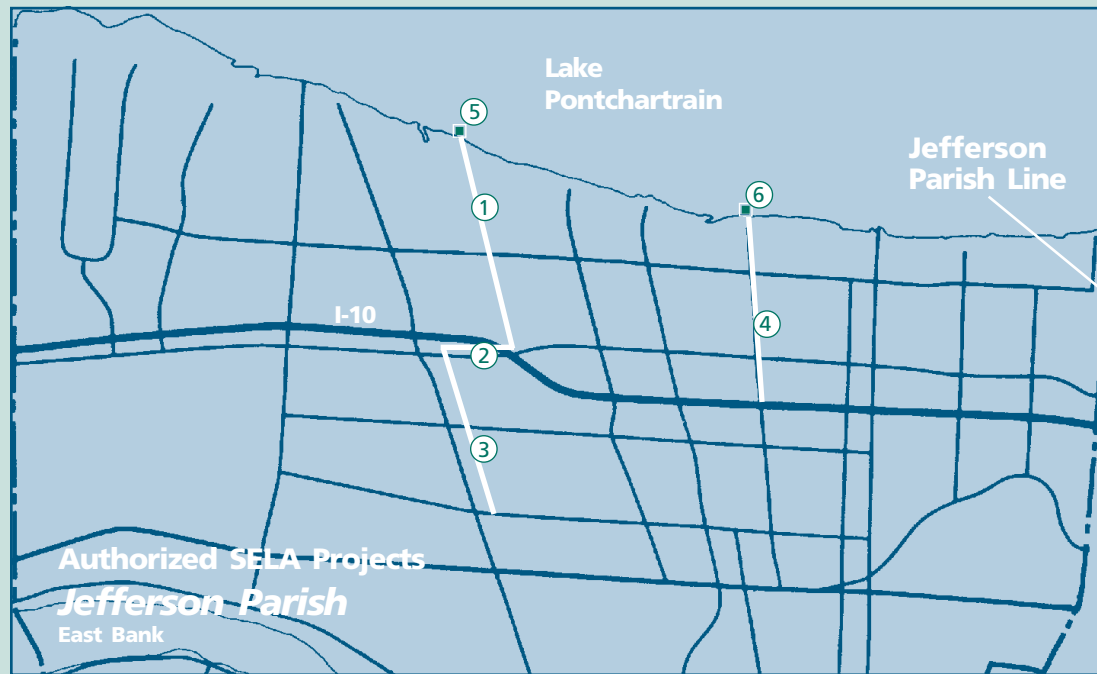
Canal Improvements

- 1 Railroad Canal improvements from Keyhole Canal to Avenue B
Work: Construct 1,490 feet of concrete-lined canal, 100 feet of concrete box culvert, 240 feet of improved earthen channel, and 390 feet of 5" concrete pipe
Cost: \$924,000
- 2 Keyhole Canal improvements from Lapalco to Railroad Canal
Work: Construct 2,790 feet of improved earthen channel, and 2,095 feet of concrete lined canal
Cost: \$1.68 million
- 3 Dugues Canal improvements from Mayronne Canal to 4th Street
Work: Construct 2,000 feet of concrete-lined canal, 1,800 feet of concrete flume, and 3,000 feet of improved earthen channel
Cost: \$550,000

- 4 Brickwall Canal improvements from Mayronne Canal to 4th Street
Work: Construct 3,369 feet of concrete lined canal, 156 feet of concrete box culvert, 2,621 feet of concrete flume, 750 feet of improved earthen channel, and 1,230 feet of corrugated metal arch pipe
Cost: \$4.52 million
- 5 Mayronne Canal improvements from Dugues Canal to Brickwall Canal
Work: Construct 2,000 feet of improved earthen channel, 185 feet of concrete lined canal, 250 feet of concrete flume, and two new bridges
Cost: \$373,000
- 6 Grand Cross Canal improvements from Ames Outfall Canal to Mayronne Canal
Work: Construct 12,250 feet of improved earthen channel and 185 feet of concrete lined canal
Cost: \$569,000
- 7 Justice Canal improvements from 4th Street to Barataria Boulevard
Work: Construct 6,880 feet of improved earthen channel and 1,100 feet of concrete lined canal
Cost: \$470,000
- 8 Two-Mile Canal improvements from Barataria Boulevard to Harvey Pump Station
Work: Construct 5,300 feet of improved earthen channel, 1,400 feet of concrete lined canal, and two new 20 foot bridge spans
Cost: \$1.26 million
- 9 Swift Canal improvements from Two-Mile Canal to near West Bank Expressway
Work: Construct 4,580 feet improved earthen channel
Cost: \$297,000
- 10 Canal A improvements from West Bank Expressway to Swift Canal
Work: Construct 75 feet of concrete box culvert, 2,230 feet of improved earthen channel, and 200 feet of reinforced concrete pipe
Cost: \$352,000
- 11 First Avenue Canal improvements from Two-Mile Canal to Cousins Canal
Work: Construct 4,370 feet improved earthen channel
Cost: \$82,000
- 12 Cousins Canal improvements from First Avenue Canal to near Barataria Boulevard
Work: Construct 6,940 feet of improved earthen channel and 200 feet of concrete lined canal
Cost: \$320,000
- 13 Pipeline Canal improvements from Cousins Canal to Dove Avenue
Work: Construct 12,250 feet of improved earthen channel and 185 feet of concrete lined canal
Cost: \$621,000
- 14 Woodmere Canal improvements from Cousins Canal to Eastview Drive/Sunnyhead Canal Improvements on full length
Work: Construct 5,980 feet of improved earthen channel and 125 feet of reinforced concrete pipe
Cost: \$906,000

Pumping Station Improvements

- 15 New Westwego Pumping Station #2
Work: Add 325 cfs pumping capacity
Cost: \$805,000
- 16 Westminster Pumping Station
Work: Construct new 1,200 cfs pumping station
Cost: \$5.92 million



SELA Project List... continued from p. 6

of an entire sub-surface canal with new sections of concrete box culvert. Canal improvements account for more than \$150 million of SELA's total effort.

Pump Station Improvements

The remaining SELA improvements will increase the pumping capacity of the current flood control system. This will be accomplished by the construction of new pump stations, or adding

additional pumps to existing pumping stations. In some instances, the parishes are incorporating improvements beyond those authorized by SELA at 100% their cost. For instance, SELA's proposed improvement to Broad Street Pumping Station #1 in Orleans Parish includes the addition of one new 1,200 cfs pump to the existing structure, but the Sewerage and Water Board of New Orleans has opted to pay the entire cost of an additional 1,200 cfs pump for backup. ♦

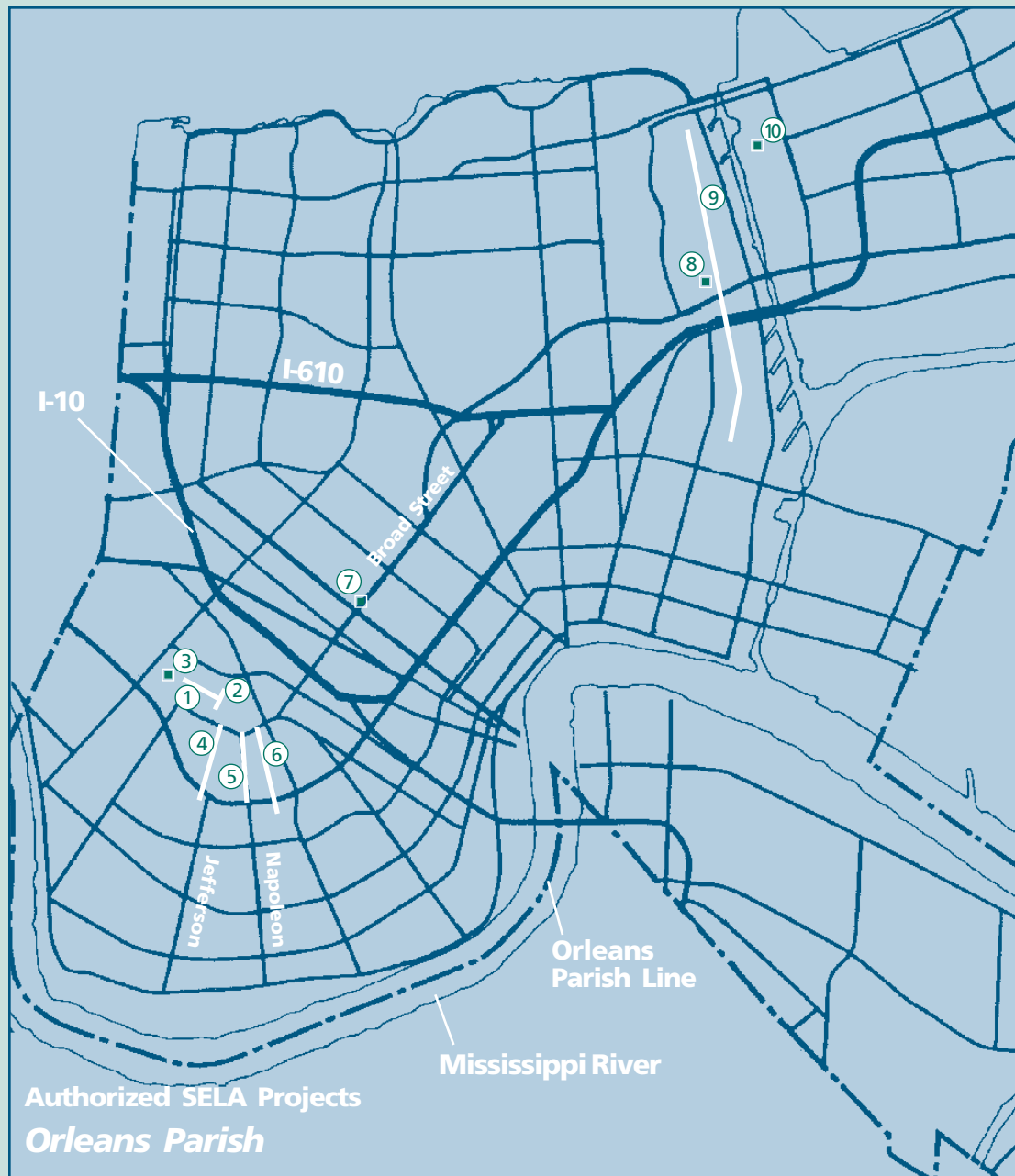
Authorized SELA Projects — Jefferson Parish East Bank

Canal Improvements

- 1 Elmwood Canal improvements from Canal #3 to Pump Station #3
Work: Construct 9,740 feet of concrete-lined canal
Cost: \$12.4 million
- 2 Canal #3 improvements from Elmwood Canal to Soniat Canal
Work: Construct 4,000 feet of combination concrete flume/concrete lined channel
Cost: \$7.2 million
- 3 Soniat Canal improvements from West Metairie to Canal #3
Work: Construct 8,750 feet of concrete-lined canal
Cost: \$9.7 million
- 4 Suburban Canal improvements from W. Napoleon to Pump Station #2
Work: Construct 8,220 feet of concrete flume and 1,770 feet of concrete lined channel
Cost: \$8.6 million

Pumping Station Improvements

- 5 Pumping Station #3
Work: Add 2,400 cfs pumping capacity
Cost: \$15.2 million
- 6 Pumping Station #2
Work: Add 2,400 cfs pumping capacity
Cost: \$15.2 million



Authorized SELA Projects — Orleans Parish

Canal Improvements

- 1 Oleander Canal improvements from Dublin Street to the Oleander Pump Station
Work: Install 4,490 feet of 10'x20' and 10'x24' concrete box culvert
Cost: \$10.6 million
- 2 Dublin Street drainage improvements from Belfast Street to Palmetto Street Canal
Work: Install 3,360 feet of 5'x5' concrete box culvert
Cost: \$4.1 million
- 4 Nashville Avenue Canal improvements from Cucullu Street to Fontainebleau Drive
Work: Install 4,150 feet of 12'x36' concrete box culvert
Cost: \$13.5 million
- 5 Napoleon Avenue Canal improvements from South Claiborne Avenue to Fontainebleau Drive
Work: Install 3,175 feet of 12'x20' and 12'x30' concrete box culvert
Cost: \$11.4 million
- 6 General Taylor Avenue Canal improvements from Willow Street to South Broad Street
Work: Install 3,990 feet of 8'x8' concrete box culvert
Cost: \$6.4 million
- 9 Peoples Avenue Canal improvements from Railroad to Florida Avenue Canal
Work: Install 250 feet of 14'x20' concrete box culvert and 500 feet of concrete lining
Cost: \$1.5 million

Pumping Station Improvements

- 3 Oleander Pumping Station
Work: Add 250 cfs pumping capacity
Cost: \$880,000
- 7 Broad Street Pumping Station #1
Work: Add 1,050 cfs pumping capacity
Cost: \$14.7 million
- 8 Peoples Canal Pumping Station
Work: Construct new 400 cfs pumping station
Cost: \$2.2 million
- 10 Dwyer Pumping Station
Work: Add 875 cfs pumping capacity
Cost: \$3.9 million



Authorized SELA Projects — St. Tammany Parish

Proposed Improvements

- 1 Mile Branch Channel Improvements
Work: Enlarge existing channels through dredging
Cost: \$4.2 million
- 2 Bayou Chinchuba Channel Improvements or Structure Raising
Work: Make channel improvements to Bayou Chinchuba or raise existing structures
Cost: Not Yet Available
- 3 Abita Springs/Lacombe Structure Raising
Work: Raise existing homes and businesses
Cost: Not Yet Available
- 4 Schneider Canal Hurricane Protection
Work: Construct hurricane protection levees, floodwalls, and pumping systems utilizing pumps and gravity drainage structures
Cost: \$26.7 million
- 5 Slidell Area Plan
Work: Make improvements to existing channels, construct detention ponds and other drainage improvements
Cost: Not Yet Available



Resident Concerns... continued from p. 12

transfer of service from the existing facility. If your utilities are affected, the interruption should be short.

Q Workers have dammed off the canal not far from my house. Will this increase the likelihood of flooding if there is a sudden down-pour?

a Contract provisions require that low flow dams in canals be built exclusively out of dirt so that the obstruction can always be removed quickly. This requirement is designed to preclude the possibility of a construction dam causing a flood when a rainstorm occurs.

Q How are these projects being funded?

a SELA is funded by the federal government and local sponsoring agencies. The federal government accounts for 75 percent of the funds, with the local agency providing 25 percent. The local sponsor in Orleans

Parish is the New Orleans Sewerage and Water Board. The local parish government is the sponsoring agency in Jefferson Parish. Work in St. Tammany Parish involves several sites and will

probably include multiple sponsors. However, project cooperation agreements are yet to be signed.♦

Quick Facts About SELA Projects*

- Parishes affected Orleans, Jefferson
St. Tammany
- Total dollars to be expended \$407 Million
- Linear feet of canal to be
constructed or improved 167,200 linear feet
- New pumping stations
to be installed 3
- Existing pumping stations
to be upgraded 6
- Amount of increase in floodwater
removal capacity (Orleans Parish) ½ inch per hour
- Average annual savings in flood
damage costs (Jefferson Parish) \$14.9 Million
- Projected construction period 1997 - 2002

*Assumes completion of all projects presently authorized by Congress



Resident Concerns: Questions and Answers

Q The Corps of Engineers will begin construction work soon on a canal in my neighborhood. I am worried that my home could be damaged by vibrations caused by heavy equipment used on this project. What has been done to reduce the possibility of damage from vibration?

a Limits for acceptable vibration levels are set by the Corps of Engineers in each SELA contract it administers. These limits will be monitored by an outside testing agency, whose representatives will bring a portable seismograph to each job site and use it to measure movement in the earth. If the monitoring shows that vibration limits are being exceeded, the testing agency will report the violation to the Corps, who will take the necessary steps to enforce the contract requirements.

Q I'm concerned about the noise from construction. What time of day will work on the canal begin, and when will it end?

a Construction times are also defined in each contract. Typical work hours are 7:00 a.m. to 6:00 p.m. Monday through Friday. However, in the interest of finishing the construction as quickly as possible, contractors have the option of extending their hours if the local noise ordinance allows more hours than the contract. In Jefferson Parish, for example, the noise ordinance allows work from 7:00 a.m. to 9:00 p.m. Monday through Saturday, and from 8:00 a.m. to 9 p.m. on Sunday.

Q Will the construction of SELA projects limit access to my home?

a Probably not, because most canal work will be done within the established right of way. However, there may be instances when a street will be torn up, affecting access to homes and businesses. The closure of these streets is an unfortunate necessity associated with improving flood control. Project managers recognize the problems created for residents and will make every effort to keep inconvenience to an absolute minimum.

Q Will the construction work affect the utility service in the area? For example, will my home ever be without electricity or water?

a Yes, it may. Relocations of utilities will be required on some contracts; however, in most cases the relocated facility will be constructed first, allowing a quick

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